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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,585	01/24/2002	Masayuki Naya	Q66584	3468

7590 10/18/2005

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EXAMINER
CHIN, CHRISTOPHER L

ART UNIT	PAPER NUMBER
1641	

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/053,585	NAYA ET AL.	
	Examiner	Art Unit	
	Christopher L. Chin	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 14-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 14-18* is/are rejected.

7)☒ Claim(s) *19-21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 7/8/05
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 is vague because it is an exact duplicate of claim 9.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-6 and 14-18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 13 of U.S. Patent No. 6,597,456 in view of Natsuume et al for the reasons of record in the office action dated 1/11/05.

In response to this rejection, Applicants argue that Natsuume et al (herein referred to as Natsuume) fails to teach, suggest, or provide the motivation to modify the

'456 patent in the manner suggested by the Examiner. Applicants go on to argue that there is no disclosure in Natsuume that suggests the use of their Zeonex polyolefin material as a dielectric block for surface plasmon resonance.

Applicant's arguments have been considered but are not convincing. Contrary to Applicant's arguments, Natsumme provides the necessary teachings to motivate one of ordinary skill in the art to use their Zeonex polyolefin material as the dielectric material in the surface plasmon sensor of the '456 patent. Natsuume teaches that the Zeonex has outstanding characteristics for optical uses and exhibits high transmittance properties (pages 245 and 250). The function of the material that supports the metal film of a surface plasmon resonance sensor is to direct incident light to the interface where the metal film contacts the support material and direct light reflected from the interface to a detector. Since the Zeonex disclosed in Natsuume has outstanding characteristics for optical uses and exhibits high transmittance properties, it would be an ideal material to support the metal film in the surface plasmon resonance sensor of the '456 patent.

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Naya et al for the reasons of record in the office action dated 1/11/05.

In response to his rejection Applicants argue that Naya et al (herein referred to as Naya) fails to disclose a dielectric block formed from a synthetic resin in which, "when said light beam is p-polarized outside said dielectric block and then strikes said interface, the intensity of an s-polarized component at said interface is 50% or less of the intensity of said light beam at said interface".

Applicant's arguments have been considered but are not convincing. The instant claims only require a dielectric block. No specific dielectric material is recited in the claims, which suggests that any dielectric material can be used in the dielectric block. The polycarbonate material that supports the metal film in the surface plasmon resonance sensor of Naya et al is sufficient to anticipate the dielectric block of the instant invention since it is a synthetic resin and a dielectric material. The last 3 lines of claim 1, as well as claims 2-3, can be viewed as either functional limitations or possibly even an intended use. In terms of an intended use, note that claims 1-3 recite "**when** said light is p-polarized" which suggests that other types of light can be applied to the dielectric block and the intensity of the s-polarized light at the interface would be immaterial if p-polarized light is not applied. In terms of the polarization characteristics being a functional limitation, since claim 1 is not limited to any specific dielectric material but only that the dielectric material be a synthetic resin, the implication is that any dielectric material that is a synthetic resin would apparently have the claimed polarization characteristics, such as the polycarbonate used in Naya.

Claim Rejections - 35 USC § 103

7. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naya et al in view of Natsuume et al.

See above for the teachings of Naya et al.

Naya et al differs from the instant invention in failing to teach a dielectric block composed of polymethylmethacrylate or a cycloolefin polymer or a cycloolefin copolymer.

See above for the teachings of Natsuume et al.

It would have been obvious to one of ordinary skill in the art to substitute the Zeonex cycloolefin polymer of Natsuume et al for the high refractive index glass or polycarbonate material in the dielectric block of the surface plasmon optical modulator element of Naya because the high transmittance properties of the Zeonex would provide for a more sensitive optical element.

8. Claims 1-12 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malmqvist et al in view of Natsuume et al.

Malmqvist et al (US Patent 5,492,840) discloses a surface plasmon resonance biosensor system. The system includes a replaceable sensor unit consisting of a substrate of a dielectric material, such as glass, which has one of its faces coated with a metal film containing one sensing surface or preferably a plurality of sensing surfaces. Each sensing surface is functionalized for selective interaction with a desired biomolecule. The system also includes an optical instrumentation unit that directs incident beams of light to each of the sensing surfaces on the metal film and detects

reflected radiation from the various metal film regions corresponding to each respective one of the sensing surfaces (col. 2, line 64, to col. 3, line 28). The sensor unit is made in one piece, for example, from a glass plate that has been coated with a thin film of a metal, such as silver or gold. To the metal film is attached a layer of an organic polymer or a hydrogel which forms a basal surface that contains functional groups for binding desired ligands (col. 4, lines 5-16).

Malmqvist et al differs from the instant invention in failing to teach using a cycloolefin polymer to support the thin metal film in the sensor unit.

See above for the teachings of Natsuume et al.

It would have been obvious to one of ordinary skill in the art to substitute a plate composed of the Zeonex cycloolefin polymer of Natsuume et al for the glass plate in the sensor unit of Malmqvist et al because the high transmittance properties of the Zeonex would provide for a more sensitive sensor unit.

Allowable Subject Matter

9. Claims 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher L. Chin whose telephone number is (571) 272-0815. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher L. Chin
Primary Examiner
Art Unit 1641

10/17/05